

WRITTEN ACTION OF THE INTERNATIONAL SEARCH OFFICE

(SUPPLEMENTARY PAGE)

Intern. File No. PCT/EP2004/052727

Re Section V.

- 1 In the present Action reference is made to the following documents:

D1: WO 2004/076845 A (BOSCH GMBH ROBERT; GERSCHWITZ THOMAS (DE); HUEBEL MICHAEL (DE); KAMME) September 10, 2004 (2004-09-10)

D2: WO 03/031799 A (BOSCH GMBH ROBERT; HOHL GUENTHER (DE)) April 17, 2003 (2003-04-17)

2 NOVELTY

- 2.1 The present application does not satisfy the requirements of Article 33(1) PCT, because the subject matter of the independent Claim 1 is not novel within the meaning of Article 33(2) PCT.

Document D1 is mentioned as P-document and may thus be cited in opposition to the novelty criterion. It discloses (the parenthetical references relate to this document, cf., for instance, Fig. 3, pages 7 - 8):

A fuel injector having a piezoelectric actuator (4), which activates a valve-closure member (17) cooperating with a valve-seat surface (18) [to form] a sealing seat; and having an hydraulic coupler (7) which includes a master piston (9), a slave piston (10) and a coupler volume (23) formed in-between, the master piston and the slave piston being axially displaceable with respect to each other and the coupler volume (23) being connected to a compensating chamber (12) by a throttle (24); a flexible section (13) at least partially delimiting the compensating chamber (12), the coupler volume (23), the throttle (24) and the compensating chamber (12) being filled with a hydraulic medium, and pressure being

applied on the flexible section (13) directly or indirectly from outside the coupler volume (23) via a fixed component (33).

- 2.2 Furthermore, D1 describes the features of the dependent Claims 2 - 5, 9, 10, 17 and 18, which therefore also do not satisfy the PCT requirement with respect to novelty (cf. para. 3): a flexible section (13) having the form and material according to Claims 2 - 4, that the spring element has a helical design according to Claim 5 and is braced on the slave piston, via a flange connected thereto, according to Claims 9 and 10, and that the throttle includes a throttling ball according to Claims 17 and 18.
- 2.2 The subject matter of Claim 1 is likewise disclosed by document D2 (cf. Fig. 2, pages 10 and 11):
A fuel injector (1) having a piezoelectric actuator (14) having an hydraulic coupler (40), which includes a master piston (44), a slave piston (45), and a coupler volume (35) formed in-between, the coupler volume (35) being connected to a compensating chamber via a throttle (46), a flexible section (47) at least partially delimiting the compensating chamber, and pressure being applied to the flexible section (47) indirectly from outside the coupler volume (35) by a spring element (54).
- 2.2 In addition, D2 also discloses the features of the dependent Claims 2 - 6 and 8, which therefore likewise do not satisfy the PCT requirements with respect to novelty:
A flexible section (47) having the form and material according to Claims 2 - 4, as well as a helical spring element (54) according to Claim 5, which is braced on the master piston according to Claim 6, and acts on the

flexible section (47) via an intermediate ring (51) according to Claim 8.

3 INVENTIVE STEP

Claims 11 and 15 do not include any features that, in combination with the features of any other claim to which they refer, satisfy the PCT requirements with respect to inventive activity since they relate to slight constructive modifications that lie within the scope of what one skilled in the art tends to do based on familiar considerations, in particular since the achieved advantages are able to be seen quite easily.

4 INDEPENDENT CLAIMS 7, 12 -14 and 16

The combination of features contained in the dependent claims is neither known from the existing related art nor anticipated by it.

Re Section VIII.

The independent Claim 1 does not satisfy the requirements of Article 6 PCT, since the subject matter of the claims is not clearly defined. In the claim a hydraulic coupler is described, but without it being defined what, or what parts, this coupler couples precisely. This leaves the reader uncertain regarding the meaning of the particular technical feature, with the result that the definition of the subject matter of this claim/these claims is unclear (Article 6 PCT).

The feature in Claim 7, i.e., that the holder (41) is immovably fixed in place on the master piston, is not mentioned in the description. Therefore, Claim 7 is not supported by the description as required by Article 6 PCT.